Welcome

Dear Actinides 2009 Delegates and Guests:

Welcome! The Grand Hyatt on Union Square in San Francisco, California, USA is the site for the eighth Actinides Conference. Earlier Actinides conferences have been held in Asilomar, CA (1981), Aix-en-Provence, France (1985), Tashkent, USSR (1989), Santa Fe, NM, USA (1993), Baden-Baden, GE (1997), Hayama, JP (2001), and Manchester, UK (2005). The Actinides series of meetings provides a regular venue for the most recent research results on the chemistry, physics, and technology of the actinides and heaviest elements.

The Actinides 2009 conference will feature current discussions on research in the physics and chemistry of the actinides and the transactinide elements. Specific topics will include fundamental materials science, chemistry, physics, environmental science, and nuclear fuels. Of particular importance will be a focus on the key roles basic actinide chemistry and physics research play in advancing the worldwide renaissance of nuclear energy. Actinides 2009 will provide a forum spanning this diverse range of scientific topics. The conference will consist of plenary lectures, invited presentations, and contributed presentations in both oral and poster formats.

We look forward to a successful meeting in San Francisco and thank you for your support of the Actinides 2009 conference.

David Shuh and James Tobin
Actinides 2009 Co-Organizers

Acknowledgements of Support

Supported by the Director, Office of Science, Office of Basic Energy Sciences, of the U.S. Department of Energy under Contract No. DE-AC02-05CH11231. Support has also been provided by the Division of Chemical Sciences, Geosciences, and Biosciences Division, Office of Science, Office of Basic Energy Sciences, U.S. Department of Energy with substantial support from the Chemical Sciences Division of LBNL.

Supported by Lawrence Livermore National Laboratory (LLNL), operated by Lawrence Livermore National Security, LLC, for the U.S. Department of Energy, National Nuclear Security Administration under Contract DE-AC52-07NA27344. Substantial support has been provided from LLNL by the Physical and Life Sciences Directorate and Campaign 2/WCI Directorate.

Actinides 2009 International Advisory Committee

Manuel Almeida, Technological and Nuclear Institute, Portugal

Roberto Caciuffo, Institute for Transuranium Elements, Germany

Jean-François Desreux, University of Liège, Belgium

Norman M. Edelstein, Lawrence Berkeley National Laboratory, USA

Richard G. Haire, Oak Ridge National Laboratory, USA

Ladia Havela, Charles University, Czech Republic

Stepan N. Kalmykov, Lomonosow Moscow State University, Russia

Reinhardt Klenze, Institute for Nuclear Waste Management, Germany

Jens V. Kratz, University of Mainz, Germany

Francis R. Livens, The University of Manchester, United Kingdom

Klaus Lützenkirchen, Institute for Transuranium Elements, Germany

Kazuo Minato, Japan Atomic Energy Agency, Japan

Heino Nitsche, UC Berkeley/Lawrence Berkeley National Laboratory, USA

Yoshichika Onuki, Osaka University, Japan

Peter Oppeneer, Uppsala University, Sweden

David K. Shuh, Lawrence Berkeley National Laboratory, USA

John Sarrao, Los Alamos National Laboratory, USA

Eric Simoni, University de Paris-Sud (IV), CNRS, IPNS, France

Jim Tobin, Lawrence Livermore National Laboratory, USA

Vinh Hung Tran, Institute of Low Temperature and Structure Research, PAS, Poland

Dominique Warin, Commissariat à l'Énergie Atomique-Saclay, France

Yongjun Zhu, Tsinghua University, China

Agenda at a Glance

Day 1 – Sunday, July 12

6:00 p.m. – 8:00 p.m.	Early Conference Registration
6:00 p.m. – 8:00 p.m.	Welcome Orientation and Reception

Day 2 – Monday, July 13

7:15 a.m. – 4:00 p.m.	Conference Registration
8:15 a.m. – 10:15 a.m.	Welcome Remarks and Opening Plenary Session
10:15 a.m. – 10:45 a.m.	Plenary Open Discussion and Refreshments Available
10:45 a.m. – 12:15 p.m.	Concurrent Breakout Sessions
12:15 p.m. – 2:15 p.m.	Poster Session and Working Lunch
2:15 p.m. – 3:45 p.m.	Concurrent Breakout Sessions
3:45 p.m. – 4:15 p.m.	Sessions Open Discussion and Refreshments Available
4:15 p.m. – 6:00 p.m.	Concurrent Breakout Sessions

Day 3 – Tuesday, July 14

7:30 a.m. – 12:00 p.m.	Conference Registration
8:30 a.m. – 10:15 a.m.	Plenary Session
10:15 a.m. – 10:45 a.m.	Plenary Open Discussion and Refreshments Available
10:45 a.m. – 12:15 p.m.	Concurrent Breakout Sessions
12:15 p.m. – 2:15 p.m.	Poster Session and Working Lunch
2:15 p.m. – 3:45 p.m.	Concurrent Breakout Sessions
3:45 p.m. – 4:15 p.m.	Sessions Open Discussion and Refreshments Available
4:15 p.m. – 6:00 p.m.	Concurrent Breakout Sessions

Day 4 – Wednesday, July 15

7:30 a.m. – 12:00 p.m.	Conference Registration
8:30 a.m. – 10:15 a.m.	Plenary Session
10:15 a.m. – 10:45 a.m.	Plenary Open Discussion and Refreshments Available
10:45 a.m. – 12:15 p.m.	Concurrent Breakout Sessions
12:15 p.m. – 2:15 p.m.	Poster Session and Working Lunch
2:15 p.m. – 3:45 p.m.	Concurrent Breakout Sessions
3:45 p.m. – 4:15 p.m.	Sessions Open Discussion and Refreshments Available
4:15 p.m. – 6:00 p.m.	Concurrent Breakout Sessions

Day 5 – Thursday, July 16

7:30 a.m. – 12:00 p.m.	Conference Registration
8:30 a.m. – 10:15 a.m.	Plenary Session
10:15 a.m. – 10:45 a.m.	Plenary Open Discussion and Refreshments Available
10:45 a.m. – 12:15 p.m.	Concurrent Breakout Sessions
12:15 p.m. – 2:15 p.m.	Poster Session and Working Lunch
2:15 p.m. – 3:45 p.m.	Concurrent Breakout Sessions
3:45 p.m. – 4:15 p.m.	Sessions Open Discussion and Refreshments Available
4:15 p.m. – 6:00 p.m.	Concurrent Breakout Sessions
7:00 p.m. – 9:00 p.m.	Conference Banquet and Presentation

Day 6 – Friday, July 17

8:00 a.m. – 10:00 a.m.	Concurrent Breakout Sessions
10:00 a.m. – 10:30 a.m.	Sessions Open Discussion and Refreshments Available
10:30 a.m. – 12:30 p.m.	Plenary Session and Conference Wrap-Up
12:30 p.m.	Conference Adjourned

Sessions at a Glance

Monday, July 13, 2009

8:30 a.m. – 10:15 a.m.
Plenary Session 1

10:45 a.m. – 12:15 p.m.

1A	1B
EAST PLAZA BALLROOM	WEST PLAZA BALLROOM
Nuclear Fuels, Materials, and Wasteforms-1	Coordination and Organometallic Chemistry

12:00 p.m. – 2:15 p.m.

Working Lunch
POSTER SESSION-1
Analysis, the Environment and Bio-transformations Separations and Solution Chemistry Solid State Physics Spectroscopy, Magnetism, and Superconductivity

2:15 p.m. – 3:45 p.m.

2A	2B
EAST PLAZA BALLROOM	WEST PLAZA BALLROOM
Metallurgy-1	Analysis, the Environment and Bio-transformations-1

4:15 p.m. – 6:00 p.m.

3A	3B
EAST PLAZA BALLROOM	WEST PLAZA BALLROOM
Spectroscopy, Magnetism, and Superconductivity-1	Separations and Solution Chemistry-1

Tuesday, July 14, 2009

8:30 a.m. – 10:15 a.m.
Plenary Session 2

10:45 a.m. – 12:15 p.m.

4A	4B
EAST PLAZA BALLROOM	WEST PLAZA BALLROOM
Spectroscopy, Magnetism, and Superconductivity-2	Coordination and Organometallic Chemistry-2

12:00 p.m. – 2:15 p.m.

Working Lunch
POSTER SESSION-2
Analysis, the Environment and Bio-transformations Separations and Solution Chemistry Solid State Physics Spectroscopy, Magnetism, and Superconductivity

2:15 p.m. – 3:45 p.m.

5A	5B
EAST PLAZA BALLROOM	WEST PLAZA BALLROOM
Solid State Physics-1	Separations and Solution Chemistry -2

4:15 p.m. – 6:00 p.m.

6A	6B
EAST PLAZA BALLROOM	WEST PLAZA BALLROOM
Nuclear Fuels, Materials, and Wasteforms-2	Heavy Elements-1

Sessions at a Glance

Wednesday, July 15, 2009

8:30 a.m. – 10:15 a.m.
Plenary Session 3

10:45 a.m. – 12:15 p.m.

7A	7B
EAST PLAZA BALLROOM	WEST PLAZA BALLROOM
Nuclear Fuels, Materials, and Wasteforms-3	Separations and Solution Chemistry-3

12:00 p.m. – 2:15 p.m.

Working Lunch
POSTER SESSION-3
Coordination and Organometallic Chemistry Metallurgy Nuclear Fuels, Materials, and Wasteforms

2:15 p.m. – 3:45 p.m.

8A	8B
EAST PLAZA BALLROOM	WEST PLAZA BALLROOM
Metallurgy-2	Coordination and Organometallic Chemistry-3

4:15 p.m. – 6:00 p.m.

9A	9B
EAST PLAZA BALLROOM	WEST PLAZA BALLROOM
Solid State Physics-2	Separations and Solution Chemistry-4

Thursday, July 16, 2009

8:30 a.m. – 10:15 a.m.
Plenary Session 4

10:45 a.m. – 12:15 p.m.

10A	10B
EAST PLAZA BALLROOM	WEST PLAZA BALLROOM
Solid State Physics-3	Coordination and Organometallic Chemistry-4

12:00 p.m. – 2:15 p.m.

Working Lunch
POSTER SESSION-4
Coordination and Organometallic Chemistry Metallurgy Nuclear Fuels, Materials, and Wasteforms

2:15 p.m. – 3:45 p.m.

11A	11B
EAST PLAZA BALLROOM	WEST PLAZA BALLROOM
Spectroscopy, Magnetism, and Superconductivity-3	Coordination and Organometallic Chemistry-5

4:15 p.m. – 6:00 p.m.

12A	12B
EAST PLAZA BALLROOM	WEST PLAZA BALLROOM
Nuclear Fuels, Materials, and Wasteforms-4	Analysis, the Environment and Bio-transformations-2

Friday, July 17, 2009

8:00 a.m. – 10:00 a.m.

13A	13B
EAST PLAZA BALLROOM	WEST PLAZA BALLROOM
Solid State Physics-4	Separations and Solution Chemistry-5

10:00 a.m. – 12:00 p.m.
Plenary Session 5

Day 1 – Sunday, July 12, 2009

6:00 p.m. – 8:00 p.m.	**Early Conference Registration** **Welcome Orientation and Reception**	Bayview Room – 36th Floor

Day 2 – Monday, July 13, 2009

8:15 a.m. – 8:30 a.m. **Welcome Remarks**

William Goldstein, Associate Director for Physical and Life Sciences
Lawrence Livermore National Laboratory

David K. Shuh, ***Lawrence Berkeley National Laboratory***

James G. Tobin, ***Lawrence Livermore National Laboratory***

8:30 a.m. – 10:15 a.m. **Plenary Session 1** East/West Plaza Ballroom
Session Chair: **James G. Tobin**
Lawrence Livermore National Laboratory

8:30 **1PL1 - Plutonium Metal and Alloys for Energy and Defense**
Siegfried S. Hecker, *CISAC/Stanford University*

9:05 **1PL2 - Microbial Transformations of Actinides in the Environment**
Francis Livens, *University of Manchester*

9:40 **1PL3 - Higher-Rank Magnetic Order Parameter in NpO_2**
Roberto Caciuffo, *Institute for Transuranium Elements*

10:15 a.m. – 10:45 a.m. **Plenary Open Discussion** Farallon Room
Refreshments available

10:45 a.m. – 12:15 p.m. **Session 1A and 1B** East/West Plaza Ballroom

East Plaza Ballroom: Session 1A

Nuclear Fuels, Materials, and Wasteforms-1
Session Chair: **Rodney Ewing**
University of Michigan

10:45
1A1 - Ceramography and Crystallography of Mixed Actinide Oxide Fuels
Fred G. Hampel, *Los Alamos National Laboratory*

11:00
1A2 - Multiphysics Modeling of a Molten-Salt Electrolytic Process for Nuclear Waste Treatment
K.R. Kim, *Korea Atomic Energy Research Institute*

11:15
1A3 - Contribution to the Thermodynamic Modeling of Americium Behavior in MA Bearing MOX-fuels
Jean C. Dumas, *Commissariat a l'Energie Atomique (CEA), France*

11:30
1A4 - Molecular Dynamics Analysis of Diffusion of Uranium and Oxygen Ions in Uranium Dioxide
Tatsumi Arima, *Kyushu University*

11:45
1A5 - Phase State in the Pu-Si-O Ternary System
Teppei Uchida, *Japan Atomic Energy Agency*

12:00
1A6 - Diffusion Behaviors of Plutonium and Americium in Polycrystalline Urania
Isamu Sato, *Japan Atomic Energy Agency*

West Plaza Ballroom: Session 1B

Coordination and Organometallic Chemistry-1
Session Chair: **John Gibson**
Lawrence Berkeley National Laboratory

10:45 – 11:15
1B1 - Quantifying Covalency in Actinide Metal-ligand Bonds
David L. Clark, *Los Alamos National Laboratory*

11:15
1B2 - New Au Oxidation Routes for Uranium and Investigation of Persistent Agostic Interactions in Mixed Ligand Uranium Systems
Robert K. Thomson, *Los Alamos National Laboratory*

11:30
1B3 - X-Ray Absorption Fine Structures of Uranyl(V) Complexes in Non-Aqueous Solutions
Koichiro Takao, *Forschungszentrum Dresden-Rossendorf*

11:45
1B4 - Is the Ground State of the Later Actinocenes Multi Configurational?
Nik Kaltsoyannis, *University College London*

12:00
1B5 - Synthesis, Crystal Structure, Vibrational Spectra and Magnetic Behavior of Isotypic $[An(H_2O)_9](CF_3SO_3)_3$ (An = U-Cm, Cf) Salts
Patric Lindqvist-Reis, *Institute for Nukleare Entsorgung*

12:15 p.m. – 2:15 p.m. **Poster Presentations** *Working lunch available* **East/West Plaza Ballroom Farallon and Dolores Room**

Analysis, the Environment & Bio-transformations

1P2 - Borate Ion Complexation of the Lanthanides and Actinides: Implications for the WIPP Salt Geologic Repository
Marian Borkowski, *Los Alamos National Laboratory*

1P3 - Plutonium Oxide Morphology
Philip Wilk, *Lawrence Livermore National Laboratory*

1P5 - Coupled Abiotic and Biotic Reduction of Pu(V) by Fe-Reducing Bacteria
Donald T. Reed, *Los Alamos National Laboratory*

1P6 - Alpha Spectrometric Characterization of Process-Related Particle Size Distributions from Active Particle Sampling at the Los Alamos National Laboratory Uranium Foundry
Alexander A. Plionis, *Los Alamos National Laboratory*

1P40 - Effect of Humic Acid on the pH-Dependent Sorption of Americium (III) and Europium (III) Onto Kaolinite
Euo Chang Jung, *Korea Atomic Energy Research Institute*

Separations & Solution Chemistry

1P9 - Reduction of Neptunium and Plutonium by Acetohydroxamic Acid in Acidic Solutions
Brent S. Matteson, *Oregon State University*

1P10 - Kinetics of Oxidation of Pentavalent Neptunium by Pentavalent Vanadium in Solutions of Nitric Acid
Martin Precek, *Oregon State University*

1P12 - Uranium Loading of TODGA/TBP/OK Solvent Mixtures
Mark J. Sarsfield, *National Nuclear Laboratory, United Kingdom*

1P15 - Investigations of Heterogeneous Interactions Involving Actinides in Nuclear Waste Ponds
Tamara Griffiths, *University of Manchester*

1P17 - Hydrolysis of An(+IV) (An=U, Np, Pu) in Room-Temperature Ionic Liquids
Emily Bosse, *AREVA*

1P19 - Solubility and Electrochemistry of Uranium Extracted into a Room-Temperature Ionic Liquid
Wendy Pemberton, *University of Nevada Las Vegas*

1P20 - Enhanced Isotopic Analysis of Plutonium in Mixed Actinide Particulates via Sequential Extraction Chromatography
Julie M. Gostic, *University of Nevada Las Vegas*

1P21 - Toward Understanding the Thermodynamics of TALSPEAK Process. Medium Effects on Actinide Complexation.
Peter R. Zalupski, *Idaho National Laboratory*

Solid State Physics

1P22 - Study of the Phase Transformation in Delta-Pu Alloys at Low Temperature Using X-Ray Diffraction
Cyril Platteau, *Commissariat a l'Energie Atomique (CEA), Valduc*

1P23 - Americium Alloys with Gold and Copper
Vladimir Radchenko, *JSC-SSC-Research Institute of Atomic Reactors, Russia*

1P24 - Formation of Curium Alloys with Iron, Cobalt and Ruthenium
Vladimir Radchenko, *JSC-SSC-Research Institute of Atomic Reactors, Russia*

1P25 - Research Sources of Ionizing Radiation Based on Transplutonium Elements
Vladimir Radchenko, *JSC-SSC-Research Institute of Atomic Reactors, Russia*

1P26 - First-Principles Study of Ground and Metastable States of Uranium Dioxide Using the GGA+U Approximation
Boris Dorado, *Commissariat a l'Energie Atomique (CEA)*

1P27 - Thermophysical Properties of Coexistent Phases in Plutonium
Franz Freibert, *Los Alamos National Laboratory*

1P30 - Physical Properties of the Possible Induced Moment Compound UMn_2Al_{20}
ChiHuan Wang, *University of California, Irvine, Los Alamos National Laboratory*

1P32 - ^{29}Si-NMR Study of Magnetic Anisotropy and Hyper-fine Interactions in the Uranium-Based Ferromagnet $UNiSi_2$
Hironori Sakai, *Arctic Region Supercomputing Center (ARSC), Japan Atomic Energy Research & Development Agency (JAEA)*

1P33 - Diffusion Behavior of Noble Gas Atoms in UO_2 and ThO_2: A First-Principles Study
Peter M. Oppeneer, *Uppsala University*

Spectroscopy, Magnetism, and Superconductivity

1P34 - Fano Spectroscopy as a Probe of Electron Correlation in Pu
Sung Woo Yu, *Lawrence Livermore National Laboratory*

1P35 - Soft X-Ray Spectroscopic Investigations of Pu Electronic Structure: Narrowing the Range of Possible Solutions
Jim Tobin, *Lawrence Livermore National Laboratory*

1P37 - Optical Properties of the <111> Surface of a UO_2 Crystal Determined by Ellipsometric Spectroscopy
Wigbert J. Siekhaus, *Lawrence Livermore National Laboratory*

1P38 - Soft X-Ray Spectromicroscopy of Actinide Complexes and Materials
David K. Shuh, *Lawrence Berkeley National Laboratory*

1P39 - Electronic Structure in Actinide Oxide Compounds Derived from Novel Hard X-Ray Techniques
Joe Bradley, *Los Alamos National Laboratory*

2:15 p.m. – 3:45 p.m. **Session 2A and 2B** East/West Plaza Ballroom

East Plaza Ballroom: Session 2A

Metallurgy-1
Session Chair: **Siegfried S. Hecker**
CISAC/Stanford University

2:15 – 3:00
2A1 - δ-Pu Alloy Behaviour on Self-Irradiation and External Effects (allotted extra time for translation)
Lidia Timofeeva, *All-Russia Research Institute of Inorganic Materials (VNIINM)*

3:00
2A2 - Selection and Evaluation of a New Pu Density Measurement Fluid
Krystyna Dziewinska, *Los Alamos National Laboratory*

3:15
2A3 - Phase Transformation in δ Pu Alloys at Low Temperature: In Situ Characterizations.
Gwenael Texier, *Commissariat a l'Energie Atomique (CEA)*

3:30
2A4 - Microstructural Influence on the Delta to Alpha Prime Transformation in Pu-Ga Alloys
Jeremy Mitchell, *Los Alamos National Laboratory*

3:45
2A5 - Production and Investigation of Thin Films of Metal Actinides (Pu, Am, Cm, Bk, Cf)
Vladimir Radchenko, *JSC-SSC-Research Institute of Atomic Reactors, Russia*

West Plaza Ballroom: Session 2B

Analysis, the Environment and Bio-transformations-1
Session Chair: **Francis Livens**
University of Manchester

2:15 – 2:45
2B1 - Speciation of Actinides by Time-Resolved Laser Fluorescence Spectroscopy
Petra J. Panak, *Physikalisch-Chemisches Institute, University of Heidelberg*

2:45
2B2 - Studies of the System Plutonium - Pore Water - Opalinus Clay by CE-ICP-MS and CE-RIMS
Thomas J. Wunderlich, *Institute for Nuclear Chemistry, University of Mainz, Germany*

3:00
2B3 - Characterization of Bio-Mineralized PuO_2, NpO_2, and UO_2 by X-Ray Absorption Spectroscopy
Hakim Boukhalfa, *Los Alamos National Laboratory*

3:15
2B4 - Sorption Behavior of Americium and Europium onto Oxide Surfaces in the Presence of Picolinate
Euo Chang Jung, *Korea Atomic Energy Research Institute*

3:30
2B5 - Nuclear Reactors During World War II in Germany: Reality or Fiction?
Razvan Aurel Buda, *Institute for Nuclear Chemistry, University of Mainz, Germany*

3:45 p.m. – 4:15 p.m. **Concurrent Session Topics Open Discussion** **Farallon Room**
Refreshments available

4:15 p.m. – 6:00 p.m. **Session 3A and 3B** East/West Plaza Ballroom

East Plaza Ballroom: Session 3A

Spectroscopy, Magnetism, and Superconductivity-1
Session Chair: **Norman Edelstein**
Lawrence Berkeley National Laboratory

4:15
3A1 - Specific Heat and Magnetism of UFe_6Al_6
Alexander V. Andreev, *Institute of Physics, Czech Republic*

4:30
3A2 - Actinides and Actinyl Luminescence
Rebecca Bradshaw, *University of Oxford*

4:45
3A3 - Synthesis and Magnetic Studies of Ternary Germanides $U_3Co_4Ge_7$ and U_3Co2Ge_7
Klara Uhlirova, *Charles University, Czech Republic*

5:00
3A4 - Kinks in the Dispersion of F-electrons: First Results from ARPES
Tomasz Durakiewicz, *Los Alamos National Laboratory*

5:15
3A5 - Crystal Structure and Physical Properties of Ternary U Compounds $U_3Bi_4M_3$ (M = Rh, Ni)
Tomasz Klimczuk, *Los Alamos National Laboratory*

5:30
3A6 - Uranium Corrosion Investigation Using ToF-SIMS (U) LA-UR 09-00274
Doug Farr, *Los Alamos National Laboratory*

5:45
3A7 - Exploring 5f-Electron Molecular Magnetism
Nicola Magnani, *Institute for Transuranium Elements, Joint Research Centre, European Commission, Karlsruhe, Germany*

West Plaza Ballroom: Session 3B

Separations and Solution Chemistry-1
Session Chair: **Tsuyoshi Yaita**
Japan Atomic Energy Agency

4:15
3B1 - Hydrolysis of Pu(VI) at Elevated Temperatures
Linfeng Rao, *Lawrence Berkeley National Laboratory*

4:30
3B2 - Automated Chemistry Efforts at Lawrence Livermore National Laboratory Using Eichrom's DGA resin
Roger Henderson, *Lawrence Livermore National Laboratory*

4:45
3B3 - NMR Contribution to Actinide Complexes Studies in Solution
Claude Berthon, *Commissariat a l'Energie Atomique (CEA)*

5:00
3B4 - Nuclear Magnetic Resonance Spectroscopy and Relaxivity of the Actinide Ions and Their Complexes
Jean F. Desreux, *University of Liege, Belgium*

5:15
3B5 - SANS and EXAFS Investigation of Alkyl Chain Length and Branching Effects of N,N-dialkylamides on Aggregation Properties
Shinichi Suzuki, *Japan Atomic Energy Agency*

5:30
3B6 - Use of Electrospray Ionization Mass Spectrometry (ESI-MS) for the Characterization of Actinides Complexes in Solution
Laurence Berthon, *Commissariat a l'Energie Atomique (CEA), France*

5:45
3B7 - Determination of the Stoichiometry of Lanthanide-BTP-Complexes with Nano-ESI-TOF MS
Michael Steppert, *Forschungszentrum Karlsruhe, Institute for Nukleare Entsorgung*

6:00 p.m. **Day 2 – End of sessions**

Day 3 – Tuesday, July 14, 2009

8:30 a.m. – 10:15 a.m. **Plenary Session 2** East/West Plaza Ballroom
Session Chair: **David K. Shuh**
Lawrence Berkeley National Laboratory

8:30 **2PL1 - Exotic Magnetism and Superconductivity in Actinide Compounds**
Yoshinori Haga, *Japan Atomic Energy Agency*

9:05 **2PL2 - Actinides in the Nuclear Fuel Cycle and Their Impact on Geologic Disposal**
Rodney C. Ewing, *University of Michigan*

9:40 **2PL3 - Study of Actinide Chemistry in CIAE**
Ye Guoan, *China Institute of Atomic Energy, (CIAE)*

10:15 a.m. – 10:45 a.m. **Plenary Open Discussion** Farallon Room
Refreshments available

10:45 a.m. – 12:15 p.m. **Session 4A and 4B** East/West Plaza Ballroom

East Plaza Ballroom: Session 4A

Spectroscopy, Magnetism, and Superconductivity-2
Session Chair: **Lester Morss**
United States Department of Energy

10:45
4A1 - Electronic Structure and Spectral Properties of Curium and Berkelium
Alexander B. Shick, *Institute of Physics, ASCR, Prague*

11:00
4A2 - Magnetism of Neptunium in NpX_2 (X=Al, Fe, Os) Ferromagnetic Compounds Probed with XMCD
Fabrice Wilhelm, *European Synchrotron Radiation Facility*

11:15
4A3 - Electronic Absorption Spectra of U^{3+} and U^{4+} in Molten LiCl-RbCl Eutectic
Takayuki Nagai, *Japan Atomic Energy Agency*

11:30
4A4 - Magnetism in Hydrogenated UTGe Compounds
Anna Maria Adamska, *Charles University*

11:45
4A5 - Electrochemical Reactions of Actinides on Single Crystal Surface in LiCl-KCl Eutectic
Yong Joon Park, *Korea Atomic Energy Research Institute*

12:00
4A6 - Magnetization of UNiGa Under Pressure
Martin Misek, DCMP, *Charles University, Czech Republic*

West Plaza Ballroom: Session 4B

Coordination and Organometallic Chemistry-2
Session Chair: **Marinella Mazzanti**
Commissariat a l'Energie Atomique (CEA)

10:45 – 11:15
4B1 - Molecular Solids of Actinide Hexacyanoferrate: Structure and Bonding
C. Den Auwer, *Commissariat a l'Energie Atomique (CEA), Marcoule*

11:15
4B - Exotic New Volatile Oxygen-Bearing Compounds of Some Actinides Found During the Last 10 Years
V.P. Domanov, *Joint Institute for Nuclear Research, Dubna*

11:30
4B3 - First Structural Approach of the Phase Diagram of Mixed Actinide(IV)-Actinide(III) Oxalates (An(IV)=Th, U, Np, Pu and An(III)=Pu, Am, Cm)
B. Arab-Chapelet, *Commissariat a l'Energie Atomique (CEA)*

11:45
4B4 - Investigating the Metal-Nitrogen Bond in Actinide Complexes
Dominique Guillaumont, *Commissariat a l'Energie Atomique (CEA), Marcoule*

12:00
4B5 - The Synthesis, Characterization, and Reactivity of Uranium(IV) Homoleptic Alkyl Complexes
Skye Fortier, *University of California, Santa Barbara*

12:15 p.m. – 2:15 p.m.	Poster Presentations *Working lunch available*	East/West Plaza Ballroom Farallon and Dolores Room

Analysis, the Environment & Bio-transformations

2P1 - Characterization of Radioactive Particles in Salt Marsh Sediments
Mustafa Sajih, *School of Chemistry, University of Manchester*

2P2 - ^{237}Np Sorption by UO_2 Under Repository Conditions
Tatiana Kazakovskaya, *Russian Federal Nuclear Center*

2P3 - Interdigitated Electrode Array Based Sensors for Environmental Monitoring of Caesium
Ian Nickson, *Lancaster University, United Kingdom*

2P4 - Preconcentration of Uranium and Plutonium from Surface Water Samples Using a Manganese Dioxide Resin
Jonathan Burnett, *Atomic Weapons Establishment*

2P5 - The Application of Graphite MALDI-TOF-MS for the Detection and Imaging of Actinides in Environmental Samples
Samantha L. Kerr, *Atomic Weapons Establishment, Aldermaston*

Separations & Solution Chemistry

2P7 - Adsorption Behavior of PuF_6 on UO_2F_2 by the Use of ^{236}Pu
Nobuaki Sato, *Institute of Multidisciplinary Research for Advanced Materials, Tohoku University*

2P8 - The Hot Lab Atalante Facility at CEA/Marcoule: Toward Minor Actinide Recycling for GenIV Systems Fuel Cycle
Dominique Warin, *Commissariat a l'Energie Atomique (CEA)*

2P9 - Reaction Mechanism of Electrolytic Reduction of Np(V)
Yoshihiro Kitatsuji, *Japan Atomic Energy Agency*

2P10 - Self-Diffusion Coefficients and Structure of the Trivalent F-Elements Ions Series in Dilute and Moderate Concentrations Aqueous Solutions. Comparative Study between Europium, Gadolinium, Terbium and Berkelium
Habib Latrous, *Faculte des Sciences de Tunis-Tunisia*

2P11 - The Development of Metallised Membranes for Radioanalytical Separation Processes
Collin Boxall, *Lancaster University, United Kingdom*

2P12 - Stability of Plutonium Occurrence Forms in Aqueous Solutions
Maxim D. Samsonov, *Vernadsky Institute of Geochemistry and Analytical Chemistry of the Russian Academy of Sciences*

2P13 - Electrochemical Characteristics of Uranium Ions in Calcium Chloride Hydrate Melts
Akihiro Uehara, *Research Reactor Institute, Kyoto University*

2P14 - Speciation and Structural Studies on the An(III)/Ln(III) Selectivity of N donor Extracting Agents on the Example of BTP
Andreas Geist, *Forschungszentrum Karlsruhe*

2P16 - Electrochemical Behaviour of Curium in Chloride Melt
Mikhail Kormilitsyn, *Research Institute of Atomic Reactors*

2P17 - Study of Reaction of CmO^{+} - CmOCl Formation in Chloride Melt by Spectroscopic Method
Mikhail Kormilitsyn, *Research Institute of Atomic Reactors*

2P18 - Separation Behavior of Am(III) and Eu(III) Using a Synergistic Mixture of Diphenyl-Phenanthroline and Cyanex-301
A. Bhattacharyya, *Bhabha Atomic Research Centre, Mumbai*

2P19 - A Role of Water in Light-Induced Reduction of Uranyl Ion
Igor Izosimov, *Khlopin Radium Institute*

2P20 - The Hydrolysis of Hydroxamic Acid Complexants in the Presence of Non-Oxidizing Metal Ions
Fabrice Andrieux, *Lancaster University, United Kingdom*

2P21 - Oxidative Leaching of Uranium Alone from Spent Nuclear Fuel Using Na_2CO_3-H_2O_2 Solution
Dong-Yong Chung, *Korea Atomic Energy Research Institute, (KAERI)*

2P40 - Evaluation of N,N-dialkyl Amides as Promising Extractants in Advanced Nuclear Fuel Cycle
P. N. Pathak, *Bhabha Atomic Research Centre, India*

Solid State Physics

2P22 - Crack-Resistance and Spall Strength of Cerium under Dynamic Loading
Victor Pushkov, *Russian Federal Nuclear Center VNIIEF*

2P23 - Multiple Intermediate Valence in Plutonium
Alex Mirmelstein, *Institute of Technical Physics*

2P24 - MD Characterization of Thermodynamic and Mechanical Properties and Phase Stability of Delta-Pu as Dependent on Alloying Additions and Radiation Decay Products. Part II
Vladimir V. Dremov, *Russian Federal Nuclear Centre-Institute of Technical Physics (RFNC-VNIITF)*

2P25 - The Results of the Application of Williamson-Hall Procedure for Analyses of Diffraction Maximum Broadening of Depleted Unalloyed Macrocrystalline Uranium After Shock-Wave Loading in Range 20-50GPa
Alexander Shestakov, *Institute of Technical Physics*

2P26 - Measuring Heat of the Alpha-Beta Transformation of Plutonium at Pulsed Volumetric Heating of Samples
Anatoly M. Lyasota, *Institute of Technical Physics*

2P27 - Alternating Layers of Plutonium and Lead or Indium as Surrogate for Plutonium
Sven P. Rudin, *Los Alamos National Laboratory*

2P28 - Theory of Defect Clustering and Mobility in AnO_{2+x} (An=U, Np or Pu)
David Andersson, *Los Alamos National Laboratory*

2P29 - Mixing Energetics and Charge Transfer Reactions in the $(U,Ce)O_2$ System
Benjamin Hanken, *University of California, Davis*

2P30 - 3D Electronic Structure of URu_2Si_2 Revealed by ARPES
Jonathan Denlinger, *Lawrence Berkeley National Laboratory*

Spectroscopy, Magnetism, and Superconductivity

2P32 - TOF Neutron Measurements on Actinide-Containing Materials at the Lujan Neutron Scattering Center
Leilani L. Conradson, *Los Alamos National Laboratory*

2P34 - Magnetostriction of a $U_2Fe_{13}Si_4$ Single Crystal
Evgeniya A. Tereshina, *Institute of Physics, Czech Republic*

2P36 - Evolution of Actinide Science Research in the U.S. Department of Energy and Predecessor Agencies
Lester R. Morss, *United States Department of Energy*

2P37 - Electronic Absorption Spectra Arising from $5f^3$ Configurations in High-Temperature Molten Salt
Young Hwan Cho, *Korea Atomic Energy Research Institute*

2:15 p.m. – 3:45 p.m. **Session 5A and 5B** East/West Plaza Ballroom

East Plaza Ballroom: Session 5A

Solid State Physics-1
Session Chair: **Yoshinori Haga**
Japan Atomic Energy Agency

2:15 – 2:45
5A1 - First-Principles Electronic and Elastic Properties of Plutonium Metal
Per Soderlind, *Lawrence Livermore National Laboratory*

2:45
5A2 - Groundstate Electronic Structure of the Actinide Carbides and Nitrides
Leon Petit, *University of Aarhus*

3:00
5A3 - Antiferromagnetic Order in the New Systems $NpNiSi_3$ and $PuNiSi_3$
Eric Colineau, *European Commission*

3:15
5A4 - Influence of Aluminum and Gallium in Substitution with Plutonium a'
Gregory Robert, *Commissariat a l'Energie Atomique (CEA)*

3:30
5A5 - LDA+DMFT Theory of Energy Gap Enhancement with Pressure in the Pu-Monochalcogenides
Michi-To Suzuki, *Uppsala University*

West Plaza Ballroom: Session 5B

Separations and Solution Chemistry -2
Session Chair: **Lynda Soderholm**
Argonne National Laboratory

2:15
5B1 - Thermodynamical Investigation of the Interaction An^{3+}/DTPA (An = Pu, Am, Cm, Cf) by CE-ICP-MS
Sylvain Topin, *Commissariat a l'Energie Atomique (CEA)*

2:30
5B2 - Formation of Polynuclear Plutonium Complexes and Their Role in Pu Redox Chemistry
Clemens Walther, *Research Center Karlsruhe, Institute for Nuclear Waste Disposal*

2:45
5B3 - Complexation of Protactinium(V) with Oxalic and Diethylene-Triamine-Pentaacetic Acids
Mickael Mendes, *National Council for Scientific Research*

3:00
5B4 - Structural Investigations on Actinide(III)-BTBP and Lanthanide(III)-BTBP 1:2 Complexes in Organic Solution
Sascha Trumm, *Forschungszentrum Karlsruhe*

3:15
5B5 - Study on Coordination Characteristics of Neptunium Ions in Calcium Nitrate Hydrate Melt by Raman Spectrometry
Toshiyuki Fujii, *Research Reactor Institute, Kyoto University, Japan*

3:30
5B6 - Spectroscopic Investigations for the Chemical Bond Properties of the Actinide and Lanthanide-Soft Donor Complexes and Molecular Design of New Ion Recognition Ligands
Tsuyoshi Yaita, *Japan Atomic Energy Agency*

3:45 p.m. – 4:15 p.m. **Concurrent Session Topics Open Discussion** **Farallon Room**
Refreshments available

4:15 p.m. – 6:00 p.m. **Session 6A and 6B** East/West Plaza Ballroom

East Plaza Ballroom: Session 6A

Nuclear Fuels, Materials, and Wasteforms-2
Session Chair: **Sue Clark**
Washington State University

4:15
6A1 - Numerical Analysis of Irradiated Am Samples in Experimental Fast Reactor Joyo
Hiroshi Sagara, *Tokyo Institute of Technology/Idaho National Laboratory*

4:30
6A2 - Synthesis and Characterization of Pu-Doped Zirconolites - $(Ca_{1-x}Pu_x)Zr(Ti_{2-2x}Fe2_x)O_7$
Matthew Gilbert, *University of Manchester*

4:45
6A3 - Recovery Behavior of Thermal Conductivity in Self-Irradiated MOX Fuel
Kyoichi Morimoto, *Japan Atomic Energy Agency*

5:00
6A4 - Leaching of UO_2 Pellets Doped with Alpha-Emitters ($^{238/239}Pu$) in a Synthetic Callovian-Oxfordian Deep Groundwater
Magaly Tribet, *Commissariat a l'Energie Atomique (CEA), Marcoule*

5:15
6A5 - Electro-Deposition Behaviors of Minor Actinides with Liquid Cadmium Cathode
Hirohide Kofuji, *Japan Atomic Energy Agency*

5:30
6A6 - The Development of a Method for the Simultaneous Measurement of Cerium IV and Chromium VI Species in Nuclear Fuel Reprocessing Process Streams
Ian Nickson, *Lancaster University, United Kingdom*

5:45
6A7 - Characterization of the Local Chemical Properties of Spent Nuclear Fuel by Shielded LA-ICP-MS
Yeong-Keong Ha, *Korea Atomic Energy Research Institute*

West Plaza Ballroom: Session 6B

Heavy Elements-1
Session Chair: **Robert Eichler**
Paul Scherrer Institute

4:15 – 4:45
6B1 - A Retrospective on a Decade of Superheavy Elements
Ken Moody, *Lawrence Livermore National Laboratory*

4:45- 5:15
6B2 - Nuclear Chemistry of Actinides and Transactinides at IMP
Qin Zhi, *Institute of Modern Physics, Chinese Academy of Science*

5:15
6B3 - Production and Properties of the Transactinide Elements
Dawn Shaughnessy, *Lawrence Livermore National Laboratory*

5:30
6B4 - Anion-Exchange Behavior of Db in HF/HNO_3 Mixed Solution Using a New On-line Chemical Apparatus
Kazuaki Tsukada, *Advanced Science Research Center, Japan Atomic Energy Agency*

5:45
6B5 - Entrance-Channel Effects in Odd-Z Transactinide Compound Nucleus Reactions
Sarah L. Nelson, *Lawrence Livermore National Laboratory*

6:00 p.m. **Day 3 – End of sessions**

Day 4 – Wednesday, July 15, 2009

8:30 a.m. – 10:15 a.m. **Plenary Session 3** East/West Plaza Ballroom
Session Chair: **Ken Moody**
Lawrence Livermore National Laboratory

8:30 **3PL1 - Chemical Investigation of Superheavy Elements 112 and 114**
Robert Eichler, *Paul Scherrer Institute*

9:05 **3PL2 - Dynamical Mean Field Theory of the Actinides**
Gabiel Kotliar, *Rutgers University*

9:40 **3PL3 - Third Phase Formation in the Extraction of Thorium Nitrate by Trialkyl Phosphates**
P.R. Vasudeva Rao, *Indira Gandhi Centre for Atomic Research*

10:15 a.m. – 10:45 a.m. **Plenary Open Discussion** Farallon Room
Refreshments available

10:45 a.m. – 12:15 p.m. **Session 7A and 7B** East/West Plaza Ballroom

East Plaza Ballroom: Session 7A

Nuclear Fuels, Materials, and Wasteforms-3
Session Chair: **Richard Haire**
Oak Ridge National Laboratory

10:45
7A1 - The Preliminary Study of Dihydroxyurea Application in Plutonium Purification Cycle
Xian Liang, *China Institute of Atomic Energy*

11:00
7A2 - Partitioning of U, Np, Th, and Eu between Acidic Aqueous $Al(NO_3)_3$ Solutions and Various TOPO Extraction Chromatographic Materials
Jenifer Shafer, *Washington State University*

11:15
7A3 - Oxygen Potential of $(Pu_{0.81}Am_{0.08}Nd_{0.11})O_{2-x}$
Shuhei Miwa, *Japan Atomic Energy Agency*

11:30
7A4 - Comparative Study of the Structural and Electrochemical Properties of Nobel Metal Inclusions in a UO_2 Matrix
Silvia Stumpf, *European Commission / JRC / ITU*

11:45
7A5 - Oxygen Potential Measurements of $Cm_{0.09}Pu_{0.91}O_{2-x}$ by EMF Method
Haruyoshi Otobe, *Japan Atomic Energy Agency*

12:00
7A6 - Solid State Synthesis of Neptunium Mononitride at Low Temperatures
Kiel Holliday, *University of Nevada, Las Vegas*

West Plaza Ballroom: Session 7B

Separations and Solution Chemistry-3
Session Chair: **Anne E.V. Gorden**
Auburn University

10:45
7B1 - Development of Spent Fuel Reprocessing Process Based on Selective Sulfurization – Study on the Pu, Np and Am Sulfurization
Akira Kirishima, *Institute of Multidisciplinary Research for Advanced Materials, Tohoku University*

11:00
7B2 - Developing the Solvent Extraction Chemistry of Hexavalent Americium
Leigh Martin, *Idaho National Laboratory*

11:15
7B3 - Future Nuclear Fuel Cycles: Prospect and Challenges for Actinide Recycling
Dominique Warin, *Commissariat a l'Energie Atomique (CEA)*

11:30
7B4 - Selective Recovery of Minor Trivalent Actinides from High-Level Liquid Waste by R-BTP/SiO_2-P Adsorbents
Yuichi Sano, *Japan Atomic Energy Agency*

11:45
7B5 - Inner-Sphere Complexes of NpO_2^+ on Dispersed Particles of Amorphous Ferric Oxides
Shinya Nagasaki, *University of Tokyo*

12:00
7B6 - Two-Phase Extraction of Actinides and Selectivity Studies Using Multidentate [O, N, S] Based Ligands
Mohan S. Bharara, *Auburn University*

12:15 p.m. – 2:15 p.m.	Poster Presentations *Working lunch available*	East/West Plaza Ballroom Farallon and Dolores Room

Coordination and Organometallic Chemistry

3P1 - The Mechanism of $UO_2(NO_3)_2 \cdot 6H_2O$ Decomposition under Microwave Irradiation
Sergey A. Kulyukhin, *A.N. Frumkin Institute of Physical Chemistry and Electrochemistry, Russian Academy of Sciences*

3P2 - Evidence for the Involvement of 5f-Orbitals in the Bonding and Reactivity of Organometallic Actinide Compounds: Thorium(IV) and Uranium(IV) Bis(hydrazonato) Complexes
Thibault Cantat, *Los Alamos National Laboratory*

3P3 - The Coordination of Uranium(VI) with N,N'-Diethyl-N,N'-Ditolyl-Dipicolinamide
Joseph Lapka, *Oregon State University*

3P4 - New Reactivity Patterns for Uranium Promoted by Mixed-Ligand Platforms
Robert K. Thomson, *Los Alamos National Laboratory*

3P5 - Ion-Association in Aqueous Ln(III) and An(III) Perchlorate Solutions at Low Water Activity
Patric Lindqvist-Reis, *Institute for Nukleare Entsorgung*

3P8 - Structural and Electrochemical Studies on Uranyl(VI) Complex with Pentadentate Schiff Base Ligand: A Guide to Stable Uranyl(V)
Koichiro Takao, *Forschungszentrum Dresden-Rossendorf*

3P9 - Actinide Alkoxides as Starting Materials for Cluster Formation
Carlos de la Fontaine, *University of Manchester*

3P10 - Using Linear Pentadentate Ligands to Understand Electronic and Redox Properties of the Actinyls
Drew Royal, *University of Manchester*

3P11 - Neptunyl Compounds: Polyhedron Geometries, Bond Valence Parameters and Structural Hierarchy
Tori Z. Forbes, *University of Notre Dame*

3P12 - New Synthetic Routes to Hydrocarbon-Soluble Lewis Base Adducts of Thorium Tetrahalides
Kevin S. Boland, *Los Alamos National Laboratory*

3P13 - On the Electron Structure of Some Hydrocarbons, Fluorocarbons and Organometallic Compounds
B.A. Nadykto, *Russian Federal Nuclear Center VNIIEF*

3P14 - Oligomeric Complexes of Actinides Formed through Ligand Controlled Hydrolysis
Sarah L. Heath, *University of Manchester*

3P15 - Electronic Structure Studies of Actnide Complexation by Maltol and Benzimidazyl Type Ligands
Byoungseon Jeon, *University of California Davis*

3P16 - Synthesis, Thermodynamics, Magnetism, and Electronic Structure in a Series of 4f vs. 5f Metal–Metal Bonds: $(CpSiMe_3)_3M–ECp^*$ (M = Nd, U; E = Al, Ga; $Cp^* = C_5Me_5$)
Stefan Minasian, *University of California, Berkeley*

Metallurgy

3P17 - Mechanical Properties of Alpha Plutonium
Tarik A. Saleh, *Los Alamos National Laboratory*

3P19 Carbon-Enhanced Hydrogen Attack on an Oxidized U-0.1Wt%Cr Surface
Shimon Zalkind, *Nuclear Research Center-Negev*

3P20 - Range Assessment of Variations of Water Vapor Partial Pressure in Reaction Vessel to Determine Uranium Metal Oxidation Rate Vs. Water Vapor Pressure
Andrey A. Karnozov, *A.A. Bochvar, All-Russia Research Institute of Inorganic Materials (VNIINM)*

3P21 - Phase Diagram and Shock Compression of Cerium
V.M. Elkin, *Russian Federal Nuclear Center-Zababakhin Institute of Applied Physics*

3P23 - Pressure-Induced Electronic Transition and Invar Behavior in Cu_3Au Structure Pd_3Fe and $Pd_3(Fe_{0.2}U_{0.8})$
Itzhak Halevy, *Nuclear Research Center Negev, Israel*

3P25 - Simulating Radiation Damage in δ-Pu and Ga-stabilised δ-Pu
Mark Storr, *Atomic Weapons Establishment*

Nuclear Fuels, Materials, and Wasteforms

3P27 - Detection and Quantification of Residual Alpha-Phase in Delta-Stabilized Plutonium
Daniel S. Schwartz, *Los Alamos National Laboratory*

3P29 - Studying the Electronic Structure of Uranium Dioxide with Density Functional Theory and Scanning Transmission Electron Microscopy
Jeffery Aguiar, *University of California Davis, Lawrence Livermore National Laboratory*

3P30 - Determining Cross Sections for Actinides Using the Surrogate Reaction Method
Jutta Escher, *Lawrence Livermore National Laboratory*

3P32 - From the Phenix Irradiation End to the Analytical Results : PROFIL R Target Destructive Characterization
Gilles Ferlay, *Commissariat a l'Energie Atomique (CEA)*

3P35 - Thermodynamic Database on U-Pu-Zr-Np-Am-Fe Alloy System
Masaki Kurata, *Central Research Institute of Electric Power*

2:15 p.m. – 3:45 p.m. **Session 8A and 8B** East/West Plaza Ballroom

East Plaza Ballroom: Session 8A

Metallurgy-2
Session Chair: **Jeremy Mitchell**
Los Alamos National Laboratory

2:15
8A1 - Phase Stabilities of Plutonium
Hyunchae Cynn, *Lawrence Livermore National Laboratory*

2:30
8A2 - Study of Phase Equilibrium of the Pu_2O_3-PuO_2 System by the First-Principles Calculation and CALPHAD Approach
Satoshi Minamoto, *ITOCHU Techno-Solutions Corporation*

2:45
8A3 - The Solubility of Hydrogen and Deuterium in Alloyed, Unalloyed and Impure Plutonium Metal
Scott Richmond, *Los Alamos National Laboratory*

3:00
8A4 - Preparation of U, Np, and Pu Metals by Mercury Amalgamation Methods: Recent Achievements and Perspectives
Rachel Eloirdi, *Institute for Transuranium Elements, Joint Research Centre, European Commission, Karlsruhe, Germany*

3:15
8A5 - The Mechanical Properties of Alpha and Delta-Stabilized Plutonium
Brandon W. Chung, *Lawrence Livermore National Laboratory*

3:30
8A6 - Crystallographic and Magnetic Properties of the Two New Actinides Compounds: Np_2Co_{17} and Np_2Ni_{17}
Halevy Itzhak, *Nuclear Research Center Negev, Israel*

West Plaza Ballroom: Session 8B

Coordination and Organometallic Chemistry-3
Session Chair: **Nik Kaltsoyannis**
University College London

2:15
8B1 - Catalysis vs. Oxophilicity: Breaking the Myth of Inactive Actinide-Oxo Complexes
Moris Eisen, *Technion -Israel Institute of Technology, Israel*

2:30
8B2 - Uranyl Peroxide Polyoxometalate Fullerene Topologies: Symmetry vs. Minimal Pentagonal Adjacencies
Ginger Sigmon, *University of Notre Dame*

2:45
8B3 - Synthesis of Magnetic Uranium-Containing Molecules
Jeffrey D. Rinehart, *University of California, Berkeley*

3:00
8B4 - Using a Soft PNP Pincer Ligand to Promote New Reactivity Patterns and Structures for the Actinide Series
Thibault Cantat, *Los Alamos National Laboratory*

3:15
8B5 - Coordination Chemistry of Pentavalent Uranyl in Anhydrous Conditions
Marinella Mazzanti, *Commissariat a l'Energie Atomique (CEA), Grenoble*

3:30
8B6 - U(VI) Oxygen Polyhedra as Pillars for Building Frameworks from Uranophane-Type Layers
Laurent Jouffret, *UCCS-Unite de Catalyse et de Chimie du Solide-UMR 8181*

3:45 p.m. – 4:15 p.m. **Concurrent Session Topics Open Discussion** **Farallon Room**
Refreshments available

4:15 p.m. – 6:00 p.m. **Session 9A and 9B** East/West Plaza Ballroom

East Plaza Ballroom: Session 9A

Solid State Physics-2
Session Chair: **Ladia Havela**
Charles University

4:15 – 4:45
9A1 - A Moving Target: Responding to Magnetic and Structural Disorder in Lanthanide- and Actinide-based Superconductors
Corwin H. Booth, *Lawrence Berkeley National Laboratory*

4:45
9A2 - Electrical Transport Measurements of Delta-Pu with Multiple Deltagen Stabilizers
Scott McCall, *Lawrence Livermore National Laboratory*

5:00
9A3 - Dynamical Processes in UO_{2+x}: Discovery of a Novel Type of Polaron
Steven D. Conradson, *Los Alamos National Laboratory*

5:15
9A4 - Study of Soft Phonons in Delta-Pu-Ga Near the Delta-Alpha Transition
Tai-C. Chiang, *University of Illinois at Urbana, Champaign*

5:30
9A5 - Neutron Scattering Study on U-dichalcogenide
Naoto Metoki, *Advanced Science Research Center, JAEA*

5:45
9A6 - Uranium Nanostructures
Ross Springell, *European Synchrotron Radiation Facility*

West Plaza Ballroom: Session 9B

Separations and Solution Chemistry-4
Session Chair: **Trevor Hayton**
University California, Santa Barbara

4:15
9B1 - Physicochemical Properties of Dicesium Tetravalent Plutonium Hexanitrate in Uranium Crystallization Process
Masaumi Nakahara, *Japan Atomic Energy Agency*

4:30
9B2 - Solid-Liquid Separation of Oxidized Americium from Fission Product Lanthanides
Thomas C. Shehee, *Washington State University*

4:45
9B3 - Unique Extraction Behavior of Americium and Curium in a System of TBP and Calcium Nitrate Hydrate Melt
Genki Okude, *Graduate School of Engineering, Kyoto University*

5:00
9B4 - The Extraction of Actinides with Diamides of Dipicolinic Acid
Alena Paulenova, *Oregon State University*

5:15
9B5 - Americium and Curium Separation in Molten Chloride Melt Utilizing the Divalency of Am
Hajimu Yamana, *Research Reactor Institute, Kyoto University*

5:30
9B6 - Uranium Extraction from Natural Waters by Ionic Liquids
Gabriele Wallner, *Institute of Inorganic Chemistry, University of Vienna, Austria*

5:45
9B7 - Flavonoids: Organic Compounds with Strong Interactions Toward Uranium
Gerhard Geipel, *Research Center Dresden-Rossendorf*

6:00 p.m. **Day 4 – End of sessions**

Day 5 – Thursday, July 16, 2009

8:30 a.m. – 10:15 a.m. **Plenary Session 4** East/West Plaza Ballroom

Session Chair: **Ken Raymond**
University of California, Berkeley, and Lawrence Berkeley National Laboratory

8:30 **4PL1 - Actinide Hydrolysis and Aggregation in Aqueous Solutions**
Lynda Soderholm, *Argonne National Laboratory*

9:05 **4PL2 - New Cubic Structure Compounds as Actinide Host Phases**
Sergey Stefanovsky, *SIA Radon*

9:40 **Angle-Resolved Photoemission Study on Uranium Compounds**
Shin-ichi Fujimori, *Japan Atomic Energy Agency*

10:15 a.m. – 10:45 a.m. **Plenary Open Discussion** Farallon Room
Refreshments available

10:45 a.m. – 12:15 p.m. **Session 10A and 10B** East/West Plaza Ballroom

East Plaza Ballroom: Session 10A

Solid State Physics-3
Session Chair: **Günter Kaindl**
Freie Universität Berlin

10:45
10A1 - 5f-Electronic States of Neptunium Compounds: $NpGe_3$, $NpCd_{11}$ and $NpRhGa_5$
Yoshichika Onuki, *Graduate School of Science, Osaka University*

11:00
10A2 - The Properties of Vacancies and Interstitials in Plutonium
Chris Marianetti, *Columbia University*

11:15
10A3 - Ab Initio Study of the Plutonium Dioxide Surfaces: Role of Electronic Correlations
Gerald Jomard, *Commissariat a l'Energie Atomique (CEA), France*

11:30
10A4 - Electronic Structure of Pu Materials from Angle-Resolved Photoemission
John J. Joyce, *Los Alamos National Laboratory*

11:45
10A5 - Phonon DOS of Alpha- and Delta-Plutonium by Inelastic X-Ray Scattering: Evidence the Delta-Phase is Stabilized by Unconventional Sources of Entropy
Michael Manley, *Lawrence Livermore National Laboratory*

12:00
10A6 - Lattice Dynamics, Elastic Constants and Phase Diagrams of the Light Actinides
Johann Bouchet, *Commissariat a l'Energie Atominque (CEA)*

West Plaza Ballroom: Session 10B

Coordination & Organometallic Chemistry-4
Session Chair: **Wayne Lukens**
Lawrence Berkeley National Laboratory

10:45
10B1 - Novel Non-Fullerene Uranyl Peroxide Nanoclusters
Daniel K. Unruh, *University of Notre Dame*

11:00
10B2 - Actinide Sulfide Ions in the Gas Phase: A Preliminary FTICR-MS Study of the Reactivity and Thermochemistry of ThS^+ and US^+
Joaquim Marcalo, *Instituto Tecnologico e Nuclear*

11:15
10B3 - Reactions of Heterocycles with Uranium Ferrocene Diamide Complexes
Paula L. Diaconescu, *University of California, Los Angeles*

11:30
10B4 - Coordination Ligands for Environmental Extraction and Sensing Applications
Anne E.V. Gorden, *Auburn University*

11:45
10B5 - Use of Hetero N,O-Donor Ligands for Selective Actinide Extraction Complexation Study of Actinides and Lanthanides with N-octyl-N-tolyl-1,10-Phenanthroline-2-Carboxamide (OcTolPTA)
Atsushi Ikeda-Ohno, *Japan Atomic Energy Agency*

12:00
10B6 - Modeling Actinide Chemistry in the Gas-Phase and at Interfaces
Wibe A. de Jong, *Pacific Northwest National Laboratory*

12:15 p.m. – 2:15 p.m.	Poster Presentations *Working lunch available*	East/West Plaza Ballroom Farallon and Dolores Room

Coordination and Organometallic Chemistry

4P1 - Gas-phase Reactions of Uranate Ions with Methanol: A Convergence of Experiment and Theory
John K. Gibson, *Lawrence Berkeley National Laboratory*

4P2 - Syntheses and Characterization of the First Ternary Neptunium (III) Thiophosphate NpPS4 and First Quaternary Neptunium (IV) Thiophosphate $K_{11}Np_7(PS_4)_{13}$
Geng Bang Jin, *Northwestern University*

4P3 - Elucidating the Redox Properties of $U^{IV}(X)_2(^{Ar}acnac)_2$ (X = StBu, OtBu, NHtBu, and CH_2SiMe_3)
David D. Schnaars, *University of California, Santa Barbara*

4P13 - Actinide Tetracyanoplatinates
Branson A. Maynard, *Auburn University*

4P14 - Characterization and Modification of a 3N, 2O Macrocyclic Complex for Selective Extractions
Michael Devore II, *Auburn University*

4P15 - Interaction of Cm(III) with Blood Serum Proteins Studied by Time-Resolved Laser Fluorescence Spectroscopy (TRLFS)
Laura Aldave de las Heras, *Institute for Tranuranium Elements*

4P16 - Electrospray and Gas-Phase Behavior of Cerium Phosphomolybdates: A Prelude to Plutonium Chemistry
Travis H Bray, *Lawrence Berkeley National Laboratory*

4P18 - Uranyl in Presence of Halide Ions in Room-Temperature Ionic Liquids Spectroscopic and Electrochemical Studies
Mickaël Mendes, *Centre National de la Recherche Scientifique*

4P19 - Biomimetic Actinide Chelators: Preclinical Development of Orally Active Decorporation Agents
Rebecca J. Abergel, *Lawrence Berkeley National Laboratory*

4P21 - Quantifying Magnetic Coupling Between Adjacent f-Metal Centers
Wayne Lukens, *Lawrence Berkeley National Laboratory*

4P22 - Polymorphism in an Actinide Organic Complex: Two Distinct Crystal Structures and Optical Properties of a Neptunyl(V)-Diamide Complex
Guoxin Tian, *Lawrence Berkeley National Laboratory*

4P40 - Actinide Coordination Chemistry and Reactivity with the Bicyclic Guanidinate Ligand, 1,3,4,6,7,8-hexahydro-2H-pyrimido[1,2-a]pyrimidinato (hpp)$^{1-}$
Elizabeth Montalvo, *University of California, Irvine*

4P41 - Beyond C–H Activation with Uranium: Reactions of Imidazoles with Uranium Ferrocene Diamide Complexes
Marisa J. Monreal, *University of California, Los Angeles*

Metallurgy

4P23 - The Plutonium / Hydrogen Reaction: Hydride Spot Initiation Time, Nucleation Rate and Radial Growth Rate as a Function of Hydrogen Pressure, Temperature and Oxide Structure
Gordon W. McGillivray, *Atomic Weapons Establishment*

4P24 - Measurement of Sound Velocities and Analysis of Phase Transitions in Cerium, Tin and Zinc
Alexey E. Kovalev, *Russian Federal Nuclear Center VNIIEF, Sarov*

4P25 - Combined Modelling and Experiment to Investigate the Uranium-Hydrogen Reaction
Andrew Willetts, *Atomic Weapons Establishment, Aldermaston*

4P27 - Work Function of Plutonium Metal and Plutonium Oxide Surfaces
David P. Moore, *Los Alamos National Laboratory*

4P28 - The Effects of Oxidation on the Near-Surface Gallium Distribution In Delta-Plutonium
Amanda Leigh Broach, *Los Alamos National Laboratory*

4P29 - The Oxidation of Plutonium from the Ultra-High Vacuum Perspective
David L. Pugmire, *Los Alamos National Laboratory*

4P30 - The Growth and Evolution of Thin Oxide Films on Delta-Plutonium Surfaces
Harry Garcia Flores, *Los Alamos National Laboratory*

Nuclear Fuels, Materials, and Wasteforms

4P31 - Plutonium Behaviour in a Portland Cement ILW Wasteform
Francis Livens, *CRR, University of Manchester*

4P32 - Aqueous-Solid Solution Model of U(VI) Uptake in C-S-H Phases
Xavier Gaona, *Paul Scherrer Institute*

4P33 - Low-Temperature Liquid-Phase-Assisted Sintering of Si_3N_4 Ceramics as an Inert Matrix for Confinement of Minor Actinides
Toyohiko Yano, *Research Laboratory for Nuclear Reactors, Tokyo Institute of Technology*

4P34 - Oxidative Corrosion of Carbide Inclusions at the Surface of Uranium during Exposure to Water
Thomas Scott, *University of Bristol*

4P35 - Electrochemical Reduction of Plutonium Oxide
Arfon Jones, *Atomic Weapons Establishment*

4P36 - Preparation of Minor Actinides Targets or Blankets by the Means of Ionic Exchange Resin
B. Arab-Chaplet, *Commissariat a l'Energie Atomique (CEA)*

4P37 - Regularities of Plutonium Sorption from Groundwater on Carbon Nanostructured Material Followed by Solidification in Magnesium-Potassium Phosphate Matrix
Sergey E. Vinokurov, *Vernadsky Institute of Geochemistry and Analytical Chemistry, Russian Academy of Sciences*

4P39 - Influence of Solvent Nature and Precipitation Conditions on Morphology of Pyrochemical Origin Plutonium Dioxide
Alexander Osipenko, *Research Institute of Atomic Reactors*

2:15 p.m. – 3:45 p.m. **Session 11A and 11B** East/West Plaza Ballroom

East Plaza Ballroom: Session 11A

Spectroscopy, Magnetism, and Superconductivity-3
Session Chair: **Roberto Caciuffo**
Institute for Transuranium Elements

2:15 – 2:45
11A1 - Fermi Surface Gapping Driven by Magnetic Fluctuations Causes the Hidden Order of URu_2Si_2
Peter Oppeneer, *Uppsala University, Sweden*

2:45
11A2 - The $5f^7$ (Am^{2+}, Cm^{3+}, and Bk^{4+}) Spectroscopy Story, EPR and Optical Studies
Norman M. Edelstein, *Lawrence Berkeley National Laboratory*

3:00
11A3 - Laser-induced Breakdown Spectroscopy for Uranium Concentration Analysis in Glass Matrix Using the Strongest Hydrogen Emission Line of the Balmer Series, H_α (656.28 nm), as External Standard
Dong Hyoung Lee, *Korea Advance Institute of Science and Technology (KAIST)*

3:15
11A4 - High Resolution X-Ray Emission Spectroscopy (HRXES): An Advanced Tool for Actinide Research
Tonya Vitova, *Institute for Nuclear Waste Disposal, Forschungszentrum Karlsruhe (FZK)*

3:30
11A5 - Magnetism and Superconductivity in UCoGe Doped by Transition Metals
Jiri Pospisil, *DCMP, Charles University, Czech Republic*

West Plaza Ballroom: Session 11B

Coordination & Organometallic Chemistry-5
Session Chair: **Christophe Den Auwer**
Commissariat a l'Energie Atomique (CEA)

2:15
11B1 - Electrochemical Studies of Uranyl Nitrate Complexes in 1-Alkyl-3-Methylimidazolium Nitrate Ionic Liquids
Yasuhisa Ikeda, *Tokyo Institute of Technology*

2:30
11B2 - Exploring Redox Properties of the Actinyls-Multimetallic Complexes and Non-Innocent Ligands
Clint A. Sharrad, *University of Manchester*

2:45
11B3 - The Reaction of Th^{2+} and C_3H_8 in the Gas-phase: A Combined Theoretical and Experimental Study
Maria del Carmen Michelini, *Dipartimento di Chimica, Universita della Calabria, Italy*

3:00
11B4 - Synthesis, Characterization, and Reactivity of Uranyl(V) Ketiminate and Diketiminate Complexes
Trevor W. Hayton, *University of California, Santa Barbara*

3:15
11B5 - Covalency Trends in Metallocene Dichlorides (M = Ti, Zr, Hf, Th, U) from Soft X-Ray Absorption and Hybrid Density Functional Theory
Stosh A. Kozimor, *Los Alamos National Laboratory*

3:30
11B6 - A Structural and Spectroscopic Study of Uranium 2,6-Bis(2-Benzimidazyl)Pyridine Complexation
Roy Copping, *Lawrence Berkeley National Laboratory*

3:45 p.m. – 4:15 p.m.	**Concurrent Session Topics Open Discussion** *Refreshments available*	Farallon Room
4:15 p.m. – 6:00 p.m.	**Session 12A and 12B**	East/West Plaza Ballroom

East Plaza Ballroom: Session 12A

Nuclear Fuels, Materials, and Wasteforms-4
Session Chair: **Claude Guet**
Commissariat a l'Energie Atomique (CEA)

4:15
12A1 - Uptake of Np by Cementitious Materials: Redox Behavior of Np(IV/V) under Hyperalkaline Conditions
Xavier Gaona, *Paul Scherrer Institute*

4:30
12A2 - Phase Separation Behavior of (U, Pu, Am, Np, Sm) O_{2-x}
Akira Komeno, *Japan Atomic Energy Agency*

4:45
12A3 - Experimental Investigations in the U-Si-C System
Henri Noel, *CNRS-University of Rennes, France*

5:00
12A4 - Vaporisation Behavior and Thermodynamics of Plutonium Oxide
Petronela Gotcu, *Institute for Transuranium Elements, Joint Research Centre, European Commission, Karlsruhe, Germany*

5:15
12A5 - Homogeneity at Molecular Scale of (U,Pu)O_2 Solid Solutions Probed by XAS
Philippe Martin, *Commissariat a l'Energie Atomique (CEA)*

5:30
12A6 - Thermal Conductivities of (Np,Am)N and (Pu,Am)N Solid Solutions
Tsuyoshi Nishi, *Japan Atomic Energy Agency*

5:45
12A7 - Basic Actinide Chemistry and Physics Research in Close Cooperation with Hot Laboratories: ACTILAB
Kazuo Minato, *Japan Atomic Energy Agency*

West Plaza Ballroom: Session 12B

Analysis, the Environment and Bio-transformations-2
Session Chair: **Gerhard Geipal**
Research Center Dresden-Rossendorf

4:15
12B1 - Effects of Uranium(VI) Sorption Kinetics on the Comparison of K_d Values Determined at Various Solution Conditions
Ruth M. Tinnacher, *Lawrence Livermore National Laboratory*

4:30
12B2 - Correlation Between the Activity Concentration of Plutonium (^{238}Pu and $^{239+240}$Pu) in Atmospheric Precipitation in Krakow, Poland and Meteorological Conditions (NAO)
Renata Kierepko, *The Henryk Niewodniczanski Institute of Nuclear Physics, Polish Academy of Science*

4:45
12B3 - Analysis of the Chemical Properties of Neptunium Under the Deep Geological Environmental Conditions in Korea
Bong Young Kim, *Korea Advance Institute of Science and Technology (KAIST)*

5:00
12B4 - Bioreduction of Np in Aquifer Sediments
Gareth Law, *University of Leeds*

5:15
12B5 - Characterization of a Uranium Accumulating Plant in Its Terrestrial Ecosystem and Under Laboratory Conditions
Katrin Viehweger, *Research Center Dresden-Rossendorf*

5:30
12B6 - Delineating Hydrated Uranyl Phosphates: Powder XRD and ATR-IR Studies
Christopher R. Armstrong, *Washington State University*

5:45
12B7 - Interaction of Trivalent Actinides with $CaCO_3$: Process Understanding on a Molecular Level
Thorsten Stumpf, *Institute for Nukleare Entsorgung, Forschungszentrum Karlsruhe*

7:00 p.m. – 9:00 p.m.	**Presentation and Conference Banquet** **Roger Falcone** **A Next Generation X-Ray Source: The X-Ray Laser Array in Berkeley** *Associate Laboratory Director, Photon Sciences* *Director, Advanced Light Source* *Lawrence Berkeley National Laboratory*	West Plaza Ballroom

Day 6 – Friday, July 17, 2009

8:00 a.m. – 10:00 a.m. **Session 13A and 13B** East/West Plaza Ballroom

East Plaza Ballroom: Session 13A

Solid State Physics-4
Session Chair: **Michael Manley**
Lawrence Livermore National Laboratory

8:00
13A1 - Peculiarities of U-Based Laves Phases
Antonio P. Goncalves, *Instituto Tecnologico e Nuclear, Portugal*

8:30
13A2 - Fermi Surface Properties of Non-Magnetic $NpCd_{11}$
Yoshiya Homma, *Oarai Center, IMR, Tohoku University*

8:45
13A3 - First Observation of Superconductivity in a Neptunium-Based Compound: Unconventionality of $NpPd_5Al_2$
Jean-Christophe Griveau, *Institute for Transuranium Elements*

9:00
13A4 - Superconductivity in U- and Pu-Based Heavy Fermion Materials
Eric Bauer, *Los Alamos National Laboratory*

9:15
13A5 - Thermoelectric Properties of Transuranium-Based Unconventional Superconductors
Krzysztof Gofryk, *Institute for Transuranium Elements, Karlsruhe, Germany*

9:30
13A6 - Structure, Properties, and Theoretical Electronic Structure of UCuOP and NpCuOP
Daniel M. Wells, *Northwestern University*

9:45
13A7 - Low-temperature Specific Heat of Delta-Pu: Pu-Ce Study
Ladislav Havela, *Charles University*

West Plaza Ballroom: Session 13B

Separations and Solution Chemistry-5
Session Chair: **P.R. Vasudeva Rao**
Indira Gandhi Centre for Atomic Research

8:00
13B1 - Trivalent Actinide-Lanthanide Separations Using TALSPEAK: Explorations of the Basic Chemistry
Ken L. Nash, *Washington State University*

8:30
13B2 - Ionic Liquids for Actinides Extraction
Ali Ouadi, *Institut Pluridisciplinaire Hubert CURIEN, Centre National de la Recherche Scientifique (IPHC, CNRS)*

8:45
13B3 Cm(III), Am(III), and U(VI) Solvation and Complexation in Room-Temperature Ionic Liquids: Spectroscopic and Theoretical Studies
Ciotilde Gaillard, *Institut de Physique Nucleaire de Lyon*

9:00
13B4 - Reactivity of Plutonium Colloids in Solution
Richard E. Wilson, *Argonne National Laboratory*

9:15
13B5 - Thermodynamics of the Extraction of Tetravalent Plutonium under PUREX Conditions
Michael Alex Brown, *Oregon State University*

9:30
13B6 - Spectroscopic Identification of Tri-n-butyl Phosphate Adducts with Pu(IV) Hydrolyzed Species
Peter Tkac, *Radiation Center, Oregon State University*

9:45
13B7 - Alternative Red-Ox Reagents in NPEX and TRUEX Processes of UREX+
Artem V. Gelis, *Argonne National Laboratory*

10:00 a.m. – 10:30 a.m. **Concurrent Session Open Discussion** Farallon Room
Refreshments available

10:30 a.m. – 12:15 p.m. **Plenary Session 5** East/West Plaza Ballroom
Session Chair: **Linfeng Rao**
Lawrence Berkeley National Laboratory

10:30 **5PL1 Actinide Specific Sequestering Agents**
Ken N. Raymond, *University of California, Berkeley/ Lawrence Berkeley National Laboratory*

11:05 **5PL2 New Developments in Actinide Organometallic Chemistry**
Jaqueline L. Kiplinger, *Los Alamos National Laboratory*

11:40 **5PL3 Development of a New Extractant and a New Extraction Process for Minor Actinide Separation**
Yasuji Morita, *Japan Atomic Energy Agency*

12:15 p.m. **Closing Remarks**

12:30 p.m. **ADJOURN**

Visiting San Francisco…

There are a number of tours and landmarks to visit in San Francisco and outlying areas. Lawrence Berkeley National Lab, Conference Services Representatives, will assist you with the Hyatt Concierge can assist you with making your stay memorable. The following activities are available through the Hyatt and are an additional fee. Please visit the Concierge desk for more information.

Alcatraz Island
Alcatraz Island, commonly referred to as simply Alcatraz or locally as " The Rock", is a small island located in the middle of the San Francisco Bay. It served as a lighthouse, then military fortification and prison, until it's most famous designation as a federal prison until 1963. In 1972 it became a national recreation area and received landmarking designations in 1976 and 1986. Visitors can only reach the island by ferry and Alcatraz is open for tours daily.
*please note that this tour does sell out so advance reservations are necessary.

City Tours

San Francisco can be toured by walking, tour bus or cable car. Tours make numerous stops at key landmarks throughout the City.

Wine Country Tours

California's Napa Valley is beyond doubt the most famous winegrowing region in America. Napa's stellar reputation was inarguably built on the merits of its elegant Chardonnay and expressive Cabernet Sauvignon, many other grapes call the valley home.

Muir Woods with Sausalito

Muir Woods hosts some of the tallest redwood trees in the world. Some tours allow you to walk or hike through this incredible canopy of redwood forest. Sausalito is a picturesque waterfront community of Sausalito, world renowned for its Mediterranean flair and breathtaking views.

Monterey/ Carmel
Monterey and Carmel has everything that's best about California. A visit to Monterey and Carmel offers the Monterey Bay Aquarium and Cannery Row, made legendary by famous writer John Steinbeck. Experience 17-mile drive and the legendary golf course, Pebble Beach, or shop the beautiful Carmel-by-the-Sea.

Museums

De Young Museum

Founded in 1895 in San Francisco's Golden Gate Park, the de Young Museum has been an integral part of the cultural fabric of the city and a cherished destination for millions of residents and visitors to the region for over 100 years. Reopened in 2005, the new de Young provides San Francisco with a landmark art museum to showcase priceless collections of American art from the 17th through the 20th centuries, and art of the native Americas, Africa, and the Pacific.

Asian Art

The Asian Art Museum of San Francisco is one of the largest museums in the Western world devoted exclusively to Asian art. Here, you can travel through 6,000 years of history, trek across seven major regions, and sample the cultures of numerous countries.

Legion of Honor

The Legion of Honor, San Francisco's most beautiful museum, displays an impressive collection of 4,000 years of ancient and European art in an unforgettable setting overlooking the Golden Gate Bridge.

Academy of Sciences

The California Academy of Sciences is a multifaceted scientific institution committed to leading-edge research, to educational outreach, and to finding new and innovative ways to engage and inspire the public.

Exploratorium

The Exploratorium is an experimental, hands-on museum designed to spark curiosity—regardless of your age or familiarity with science. Touch, pick up, and tinker with hundreds of exhibits. Your curiosity will guide you to endless discoveries!

Day at the Spa
Just want to relax? San Francisco offers a number of day spas that will pamper, relax and relieve your stress.

Tour of AT&T Ball Park
AT&T Park, with its breathtaking views and classic design, was chosen as the 2008 Sports Facility of the Year by Sports Business Journal and Sports Business Daily as part of the inaugural Sports Business Awards program. The first privately financed ballpark in Major League Baseball since 1962, the Giants' home has many incredible features.

Theatre and Events
The San Francisco Bay Area is the third largest theatre center in the country, with more than 400 companies in 11 counties. The region boasts more theatre companies per capita than almost any other metropolitan area in the U.S. Whether you are looking for comedy, theatre, dance, opera or Broadway, San Francisco will not disappoint your love for the arts.